

THE NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

Vol. 5 No. 2

# PATHFINDER

THE GEOSPATIAL INTELLIGENCE MAGAZINE

MARCH/APRIL 2007



WHY NGA SUPPORT TEAMS  
MAKE A DIFFERENCE



NGA AND AIR FORCE DEVELOP  
ADVANCED GEOINT

**shapingGEOINT**  
for Intelligence Work



## ON MY MIND

# NGA: Part of the Team

The Intelligence Community (IC), two years ago, looked considerably different than it does today. Sixteen agencies operated in a different environment, guided by a director splitting his time between running the Central Intelligence Agency and working to integrate all of our 16 intelligence agencies. Today, we are members of one Community working toward the common goal on how to best confront new and diverse threats.

The NGA leadership has developed 12 strategic goals identified as Focus Areas to ensure NGA is best prepared to succeed in this environment. One of these Focus Areas is to “look outward and be the most collaborative partner with the IC and the warfighter.” NGA must set a high standard for collaboration and integration across the intelligence and defense communities. Former Director of National Intelligence John Negroponte recently provided a progress update on the IC’s accomplishments in the two years since Congress enacted and the President signed the Intelligence Reform and Terrorism Prevention Act. Ambassador Negroponte applauded NGA for “stepping out of the box to help our nation assess and mitigate the impact of Hurricane Katrina on the Gulf Coast.” He also said that “the innovative response to domestic challenges perfectly reflects NGA’s vital role on the warfront where it is totally integrated in successful, real-time operations.” NGA is on the right path to collaborate with our IC partners and focus on defeating threats to our freedoms and way of life.

NGA’s ability to successfully work with our partners depends on the men and women of NGA and our technology. Our NGA Support Teams (NSTs) and other embedded personnel, enabled by our eGEOINT initiatives, provide our partners with what they need, when they need it. Moreover, the nature of our GEOINT mission requires us to be included in virtually every mission set in which our IC and interagency partners are involved. NGA is often in the background as the nation’s diverse missions are executed, but we are always involved, directly or indirectly.

Our NSTs and deployers strengthen the power of the Agency’s in-field capability by jointly producing actionable intelligence, meeting other mult-INT requirements and enhancing cross-agency communication. During recent trips to Southwest Asia I traveled with NGA leaders and witnessed firsthand the tremendous impact our outward-focused, forward-deployed and embedded analysts are having on the front line. On-site NGA analysts, as part of the team, conduct deep and robust analysis, directly contributing to all-source intelligence products used in the execution of operations and future mission planning. This powerful multi-INT approach produces rich, actionable intelligence. Moreover, this approach is highly valued by our partners and demonstrates commitment to our Focus Area to “strengthen (our) quality of analysis in concert with other IC partners.”

Our partners also have an increasing need for user-friendly and responsive access to our GEOINT information and services in an online, on-demand environment. NGA’s commitment to our Focus Area to “implement an information technology structure to provide access and discovery of GEOINT” is demonstrated in our moving to a “Service-Oriented Architecture (SOA).” As new collection capabilities come online, we will ingest the data, use it and make it available to users electronically, much the same way we would do business over the Internet. This kind of architecture is oriented toward portal services, Web-based collaboration and network-centric reusable services. Also, over the next several months, the eGEOINT Management Office will be releasing new tools that will advance GEOINT like never before. Having said that, it is clear that these capabilities are used most effectively and most extensively where we have NGA personnel assigned as part of the team.

We are a nation at war. This is the Long War and demands that NGA expand its requirements in an ever-changing operational environment. We must remain agile and continue to ensure insightful, actionable GEOINT to those who make life and death decisions. This is a dynamic environment where operational missions and intelligence problems are more diffuse and ambiguous. This is not the tradition in which we have grown up, but this is the new reality in this asymmetric era.

Make no mistake, NGA’s support to the defense, intelligence and civil communities, is real, significant and enduring. NGA is setting the pace to strengthen relationships with our mission and coalition partners, as well as our allies to make sure that GEOINT is fully absorbed at the appropriate time and place to make a difference. Your commitment to advancing this collaboration is essential to ensure that our national security and that of our allies is advanced.



*Robert B. Murrett*  
**ROBERT B. MURRETT**  
 Vice Admiral, USN  
 Director

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### ON THE COVER

Shaping GEOINT for intelligence work is a hands-on effort for every member of the NGA family. With the knowledge that our mission requires NGA to be involved in virtually every mission of the Intelligence Community, the Agency's workforce is intent on making sure that GEOINT is the best available at the appropriate time and place to make a difference. Through the research and production of new forms of GEOINT, policy development focused on unified GEOINT operations, and enhanced collaboration—both online and face to face—NGA is shaping GEOINT for intelligence work. You will find this issue filled with examples of how NGA personnel are strengthening the Intelligence Community alongside partners as diverse as the National Air and Space Intelligence Center and the Department of Energy. Photo by Rob Cox.

**“NGA stepped ‘out of the box’ to help our nation assess and mitigate the terrible impact of Hurricane Katrina. The innovative response to domestic challenges perfectly reflects NGA’s vital role on the warfront where it is totally integrated in successful real-time operations.”**

*—Ambassador John D. Negroponte  
Director of National Intelligence  
January 19, 2007*





## LETTER TO OUR READERS

# Shaping GEOINT for Intelligence Work

If NGA's focus areas could be summed up, they might be expressed in the theme for this issue: "Shaping GEOINT for Intelligence Work." The topic incorporates everything from policy initiatives to taking advantage of the latest Web technology. The common thread is that geospatial intelligence is essential to all other forms of intelligence. And so our primary focus must always be to infuse GEOINT in the decision space of our key partners—those charged to ensure our national security.

The articles examine a few of the ways this Agency is dedicated to shaping GEOINT for intelligence work.

First, our analysts have joined with their counterparts throughout the Intelligence Community in taking advantage of Intellipedia. NGA's Chris Rasmussen, who has taken a leading role in this effort, explains the benefits of this breakthrough in interagency collaboration in the article "Intellipedia Shows Revolutionary Promise." Meanwhile, NGA continues to place primary emphasis on face-to-face engagement with fellow analysts and customers. Juanita Hartbarger examines the historical development of these contacts in "Why NGA Support Teams Make a Difference."

Last October NGA became the Functional Manager for advanced geospatial intelligence, an area that holds great promise to raise the bar for the "impact" of GEOINT. NGA's support team at the National Air and Space Intelligence Center is promoting efforts to develop this discipline while simultaneously integrating it with other GEOINT capabilities. William Foster and Marianne Kramer tell the story in "NGA and Air Force Develop Advanced GEOINT."

To gain insight into the complex issue of accessing GEOINT, be sure to read "Creation of GEOINT Fits Overall Intelligence Strategy," by Amanda Cashwell and Pamela Duke. "Unified GEOINT Operations: A Significant Cultural Change," by Navy Lt. Jean Dietz, describes a key NGA initiative to improve analytical sharing across the National System for Geospatial-Intelligence and the entire Intelligence Community. Thomas Clark's article, "NGA CIO Takes Initiative on Collaboration," provides a case study of the benefits of collaboration in the key area of information operations. You will also find our departments worth your attention. They cover partnerships with the Department of Energy and University of Missouri, a typical day of an NGA Support Team, the role of GEOINT in the Battle of Yorktown and workforce input to the New Campus East.

The next Pathfinder will be our third on the theme of getting GEOINT to the warfighter. We intend it to be a serious look at what's new in support NGA provides to our men and women on the frontlines.



  
PAUL R. WEISE

Director, Office of Corporate Relations

# PATHFINDER

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## GETTING PUBLISHED

All members of the geospatial intelligence community are welcome to submit articles of community-wide interest. Articles are edited for style, content and length. The copy deadline is the last Friday of the third month before publication. For details on submitting articles, send an e-mail to [pathfinder@nga.mil](mailto:pathfinder@nga.mil).

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# Intellipedia Shows Revolutionary Promise

**By now you have heard about—or even used** Wikipedia®—the largest free-content encyclopedia on the Internet. But you may not have heard about Intellipedia—a Wikipedia-plus for the Intelligence Community (IC). Intellipedia has a potential for collaboration that we are just beginning to tap.

Launched Jan. 15, 2001, Wikipedia was described by one of its founders as “an effort to create and distribute a multilingual free encyclopedia of the highest possible quality to every single person on the planet in their own language.” Currently Wikipedia has more than 5 million articles and ranks among the 20 most visited Web sites. As its name indicates, Wikipedia is a “wiki” Web site that allows visitors to easily add, remove and otherwise change some of the available content.

As Wikipedia’s article on Intellipedia explains: “Intellipedia is a classified wiki that runs on the Joint Worldwide Intelligence Communication System (JWICS)—the top secret network that links the 16 agencies comprising the U.S. Intelligence Community.” As of September 2006 it contained approximately 5,000 articles on the areas, people and issues of interest to those agencies.

Intellipedia uses Mediawiki, the same software Wikipedia uses. A free wiki software developed to serve the needs of Wikipedia, Mediawiki has become one of the most popular general wiki solutions. Intellipedia began as a pilot project in September 2005 and became official last April.

## NGA Is an Intellipedia Leader

The Office of the Director of National Intelligence’s IC Services developed and maintains Intellipedia. According to a non-scientific NGA user template count, NGA has the second most Intellipedia users in the IC.

Chris Rasmussen of NGA’s Joint Operations Integration Office (JOIO) has been involved with Intellipedia from its onset and underscores its potential for the IC.

“To date, the wiki is the fastest and most transparent knowledge management tool available,” Rasmussen says. “It helps us reduce the amount of redundant ‘finished intelligence’ and the use of isolated, point-to-point communications such as e-mail.”

But, as he explains, there is some resistance to this learning tool.

“The wiki disrupts the entire cottage industry in the IC, built around the production and editing of finished intelligence,” according to Rasmussen. “The IC needs to downsize and re-train its personnel who have aging skills. Keeping the bookbinder around after the company decides to go online is not only a disservice to the company but to the bookbinder as well. The bookbinder needs to be re-trained, not protected.”

Rasmussen wrote a paper, “Digital Natives and Digital Immigrants in the U.S. Intelligence Community: Generational Cognition and Effective Knowledge Management for the J-Curve,” which made him a finalist for the Galileo Award. Sponsored by the Office of the Director of National Intelligence, Galileo Awards are part of the IC’s ongoing quest to find bold, creative solutions to national intelligence challenges.

## DIA Finds Advantages with Intellipedia

Users in the Defense Intelligence Agency’s Directorate for Analysis have become strong advocates for the online resource. “The content on Intellipedia can range from very general to specific substantive intelligence information,” an analyst said. “Intellipedia allows individuals to categorize themselves in multiple places and multiple groups, cutting across all the agencies.”

As an example of Intellipedia’s rapid information exchange capabilities, the analyst pointed to the crash of a small plane into a New York City high-rise last year. “Within two hours of the crash, Intellipedia’s crash page was updated 80 times by contributors across the IC,” the analyst said.

According to Rasmussen, “It might not be as pretty and perfect, but something on a wiki that is 80 percent accurate and on time, and that can be shared and updated, is more valuable than something that is perfectly formatted or too much, or that comes too late. Once Intellipedia reaches critical mass, with hundreds or even thousands of users per agency and command, its speed, flexibility, audience size and collaborative power will save lives.”

Besides JWICS, Intellipedia is on two other networks, the SIPRNet and NIPRNet. ■

*This article, which originally appeared in the InterComm, a publication of the Defense Intelligence Agency, Oct. 23, 2006, has been updated and adapted for Pathfinder readers.*



# Why NGA Support Teams Make a Difference

By JUANITA HARTBARGER

**NGA Support Teams (NSTs)** project the power of geospatial intelligence (GEOINT) to more than 100 locations at home and abroad. NSTs serve diverse mission partners—intelligence professionals, military professionals and first-responders in time of natural and manmade disaster.

Previous Pathfinder articles have described the work of the NSTs, but how did the various command, agency, international, service and military-test-range NSTs that we have today come into existence, and why?

“NSTs provide ongoing service as the Agency’s first-line representatives,” said NGA Director Vice Adm. Robert B. Murrett. “It is the talent, expertise and dedication of our NST professionals around the world that give GEOINT users the responsive service and tailored support they need to solve intelligence and defense problems.”

NST professionals—aeronautical analysts, geospatial analysts, geodetic scientists and imagery analysts—are the public face of NGA’s GEOINT expertise. NST profes-

sionals represent the full range of disciplines, skills and talent developed within NGA, and they work side by side with NGA’s mission partners in the military services, combatant commands and federal agencies in the Intelligence Community (IC).

## Before NGA

As early as 1987, the Defense Mapping Agency (DMA), one of NGA’s predecessor organizations, forward-deployed liaison officers to coordinate the delivery of mapping and charting services to the joint commands and military services.

DMA soon formalized this arrangement by creating service teams and command teams, with the command teams functioning under DMA’s Operations Directorate and the service teams under the Acquisition and Technology Directorate. Back at DMA headquarters, military plans officers worked with the commands to define and document requirements, while civilian technical experts



A B-1B Lancer carries a Sniper pod on its belly as it flies over Edwards Air Force base during a flight test. An NGA Support Team provides support on base to the Air Force Fight Test Center at Edwards. The Sniper pod is an advanced targeting pod with a multi-sensor system that increases the aircraft’s targeting ability. Air Force photo by Steve Zapka





**“It is the talent, expertise and dedication of our NST professionals around the world that give GEOINT users the responsive service and tailored support they need to solve intelligence and defense problems”**

—NGA Director Vice Adm. Robert B. Murrett at NGA Support Team Conference



*The National Operations Center of the Department of Homeland Security (DHS) operates around the clock. The DHS NGA Support Team is a major player in the Center's operations.*

worked with the service and command Teams to convert the requirements into executable production plans. This is how DMA supported the warfighter during Operations Desert Shield and Desert Storm.

Desert Storm demonstrated for DMA and the warfighter the effectiveness of combining geospatial and imagery intelligence in precision warfare. This led to the next major change in the delivery of GEOINT: centralizing the separate geospatial disciplines in one agency. In October 1996, the National Imagery and Mapping Agency (NIMA) was created.

The new agency consolidated the work of DMA and the Central Imagery Office, Defense Dissemination Program Office and CIA National Photographic Interpretation Center. NIMA also assumed the duties for imagery exploitation, dissemination and processing that the Defense Intelligence Agency, National Reconnaissance Office and Defense Airborne Reconnaissance Office had formerly held.

Moreover, the customer-service structure was realigned to support the new organizational structure. NIMA developed its own Customer Support Teams (CSTs) based on the DMA service and command Team model, but with greater reach. In addition to working with the military services and joint commands, as the DMA service and command Teams had, NIMA CSTs also supported national customers such as the State Department, Defense Intelligence Agency and National Security Agency. Under NIMA, CST Liaison Officers worked on policy and planning issues with major customers, while technical representatives

provided direct support to geospatial information systems at the lower echelons.

Even with this broader mandate, however, the teams differed from today's NSTs in at least two significant ways. The NIMA CST of the late 1990s served primarily as a liaison between the customer and NIMA headquarters, and the forward-deployed structure did not include imagery analysts, who at that time worked from headquarters.

The Sept. 11, 2001, terrorist attacks forced the entire IC to confront the reality that its methods of developing intelligence and delivering it to customers must change. Within days of the attacks, retired Air Force Lt. Gen. James R. Clapper Jr. officially took command of NIMA.

What the new Director found was that NIMA had already begun to reassess its business processes to determine how it could more effectively leverage technology to meet emerging, post-Cold War threats including asymmetric terrorism. In 1999, because some in the policymaking community perceived that the three-year-old agency was still struggling towards defining its role within the IC, Congress had instructed the Director of Central Intelligence and the Secretary of Defense to form a commission to review NIMA's operations. One issue that the Commission addressed in its report, delivered in December 2000, was the allocation—and *location*—of imagery resources.

As the Commission reported, “From all accounts, the placement of NIMA imagery analysts at the military commands is highly productive: proximity to the all-source analyst, cognizance of the specific problem set,



**“The importance of integrated, all-source analysis cannot be overstated. Without it, it is not possible to ‘connect the dots.’ No one component holds all the relevant information”**

— *National Commission on Terrorist Attacks upon the United States.*

and collocation with other relevant sources of information all contribute to the heightened ability of the imagery analyst stationed at the commands. Yet [other members of the Intelligence Community]...are bereft of such dedicated, on-site support.”

In the wake of 9/11, the NIMA Director moved what might have been evolutionary change into fast-forward mode. Along with DMA’s Customer Support Teams, the National Security Agency’s Cryptologic Support Groups (CSGs) served as a model for restructuring NGA’s customer-support operations. CSGs deployed teams of signals intelligence (SIGINT) professionals side by side with their customers, not just to develop SIGINT products, but also to educate those customers about the range of SIGINT options available for solving intelligence problems. The goal was to give them what they needed, which was often more than and different from what they said they wanted. Just as CSGs were the access point into SIGINT, NSTs became the access point for GEOINT.

Clapper consolidated imagery analysts, technical representatives (now called geospatial analysts) and all other deployed personnel under the customer-support organization. To clarify NIMA’s interface with its mission partners and emphasize the Agency’s transformation as the locus of all GEOINT products and services, he gave the CSTs a new name—NIMA Support Teams (NSTs). Each NST had a designated chief who, along with his or her team, represented *all* of NIMA, not just an individual directorate. Customer service was no longer just a liaison function, with the actual production occurring back at headquarters. A team of deployed NIMA geospatial professionals now worked on site, collaborating with and educating the customer about GEOINT products and services.

NIMA became NGA in 2003 and NIMA Support Teams became NGA Support Teams. The creation of NSTs and the promotion of GEOINT as a separate intelligence discipline, as well as the promotion of NGA as the locus of GEOINT knowledge, expertise and resources, are the hallmarks of Clapper’s tenure.

## NSTs Today

NGA assigns its GEOINT specialists to the mission partner’s footprint for three to five years. These externally assigned personnel work on agency NSTs, command NSTs, international NSTs, service NSTs, service intelligence center NSTs and military-test-range NSTs, all of which provide tailored GEOINT support to meet their mission partner’s specific needs. They, along with NGA’s forward-deployed personnel, also provide critical intelligence back to NGA.

What makes NSTs unique is that they are embedded within the mission partner’s organization and dedicated to working as a fully integrated member of that organization, while at the same time they are fully connected to the NGA mother ship. The reach back to NGA ensures that the necessary GEOINT resources are available for the specific GEOINT needs of the NGA partner.

Among its other findings, the National Commission on Terrorist Attacks upon the United States (the 9/11 Commission) concluded in its 2004 report that the intelligence community needed to be reconfigured, citing what it called “structural barriers to performing joint intelligence work.”

“National intelligence is still organized around the collection disciplines of the home agency, not the joint mission,” the report said. “The importance of integrated, all-source analysis cannot be overstated. Without it, it is not possible to ‘connect the dots.’ No one component holds all the relevant information.”

Today, NSTs are leading the way in IC collaboration, working alongside NGA’s mission partners every day to “connect the dots.” P

### JUANITA HARTBARGER

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# NGA and Air Force Develop Advanced GEOINT

BY WILLIAM J. FOSTER AND MARIANNE KRAMER

In July 2005, the Director of National Intelligence named NGA the Functional Manager for advanced geospatial intelligence (AGI). Formerly known as imagery-derived measurement and signature intelligence (MASINT), AGI utilizes spaced-based remotely sensed multi-spectral data and advanced processing and analysis techniques. NGA had already assumed responsibility for AGI from the Defense Intelligence Agency (DIA) in 2002.

The functional management changeover to NGA comes against a backdrop of successes in the development of AGI achieved over the years by the National Air and Space Intelligence Center (NASIC). Located at Wright-Patterson Air Force Base, near Dayton, Ohio, NASIC is the Air Force's single integrated intelligence production center and the primary producer in the Department of Defense (DoD) of foreign air and space intelligence. At NASIC all-source analysts assess the intents and employment of current and developing foreign air and space capabilities.

NASIC analysts contribute to national intelligence estimates, national policy formulation, weapons-treaty negotiations, verification and compliance regimens, and traditional long-dwell, body-of-knowledge scientific and technical intelligence. Their products help shape "I need it now" combat effectiveness, "we need to think about this" policy formulation and "how do we counter that?" survival

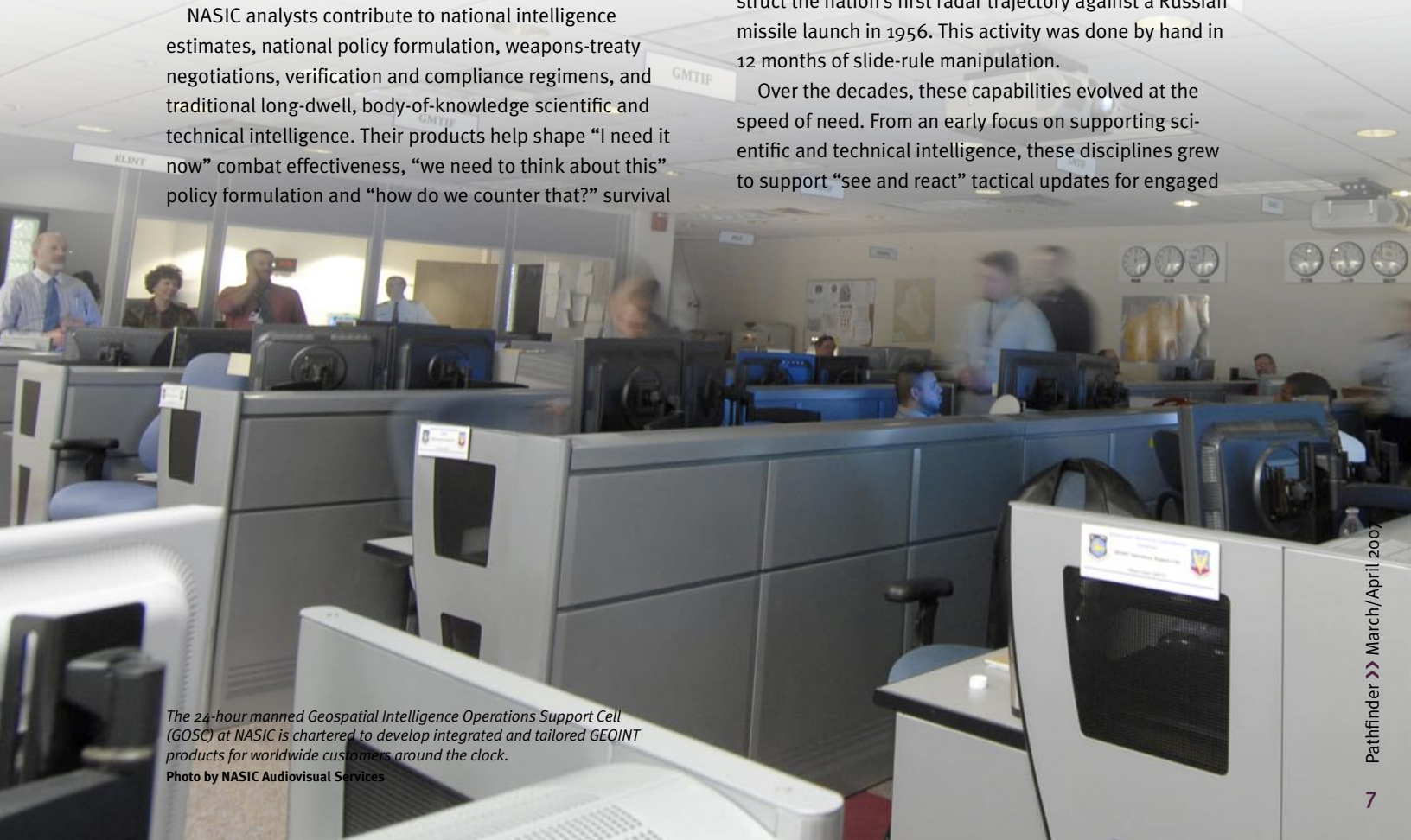
and supremacy issues associated with U.S. air and space systems.

## Air Force Center Was Pioneer in AGI

"NASIC has a richness of data sources that is unsurpassed and generally unequalled," says retired Air Force Lt. Col. Cheryl Haralson, former Chief of the Imagery Exploitation Division and presently a contractor supporting NGA in Dayton. "These sources are supported by a community of scientists, mathematicians and engineers capable of going beyond everyday exploitation methodology, people who can take data apart in ways that are not taught in tech school."

Scientists play a leading role in the intelligence work done at NASIC. They have a rich history of contributions throughout the Cold War and during the confusion of today's multipolar world. As early as the mid-1950s they developed algorithms and other analytical tools to reconstruct the nation's first radar trajectory against a Russian missile launch in 1956. This activity was done by hand in 12 months of slide-rule manipulation.

Over the decades, these capabilities evolved at the speed of need. From an early focus on supporting scientific and technical intelligence, these disciplines grew to support "see and react" tactical updates for engaged



The 24-hour manned Geospatial Intelligence Operations Support Cell (GOSC) at NASIC is chartered to develop integrated and tailored GEOINT products for worldwide customers around the clock.

Photo by NASIC Audiovisual Services





Photo by NASIC Audiovisual Services

*The National Air and Space Intelligence Center at Wright-Patterson Air Force Base, Ohio, is the Air Force's single integrated intelligence production center and the primary producer in the Department of Defense of foreign air and space intelligence.*

forces. As the information age dawned, NASIC developed applications in airborne electro-optical and synthetic-aperture-radar analyses that have significantly expanded American understanding of the battle space.

### Assets Now Under GEOINT Program

The transfer of AGI functional management and associated resources to NGA means that more than a quarter of NASIC's budget and workforce of Air Force civilian and supporting contractor personnel are now resourced through the National Geospatial-Intelligence Program (NGP). Coupled with a fiscal 2004 presidential budget decision, which transferred civilian imagery analysts from the services to NGA, the changeover means that a wide range of activities and organic expertise at NASIC is now highly visible and of keen interest to NGA.

As Functional Manager of AGI, NGA manages and oversees AGI-related assets and missions. It's a management and cultural change that requires significant adjustment in both organizations. For NASIC and the Air Force it means developing new relationships after years of close association with DIA. For NGA it's an opportunity to lead unified operations in the newest emerging intelligence capabilities the nation possesses, all new elements of the NGP.

NASIC has produced imagery and spatial intelligence for more than 50 years but never with more capacity or

diversity than now. NGA's presence at NASIC dates back almost 10 years but was never associated with responsibility to support such a wide range of technical areas as now. So it should be no surprise that the NGA presence at NASIC has undergone a radical transformation over the past year.

### NGA Support Team Is Unique

What was once a broader service intelligence center NGA Support Team (NST) and stand-alone liaisons with NGA's InnoVision Directorate and Office of Geospatial-Intelligence Management has evolved into a hybrid NASIC NST incorporating a Geospatial Intelligence Advancement Testbed (GIAT) that supports both NGA and NASIC and provides NGA online interface with Air Force NGP activities.

The NASIC NST is unique due to its heavy involvement in AGI technologies and a team chartered to serve both NGA imagery analysts and Air Force personnel, both funded within the NGP. Within the footprint of the NST are imagery analysts employed by NGA who provide direct support to NASIC and a staff from several NGA Key Components that supports analysts employed by the

## A Model for IC Collaboration

BY LARRY BENSON, CHIEF  
National Air and Intelligence Center  
NGA Support Team

The recent Senior Management Council for the National System for Geospatial Intelligence, with the theme of "GEOINT Partnerships and Improving Support to the Warfighter," highlighted the need for concepts of operation for working together to share production requirements and minimize duplication. Increased collaboration was viewed as a vital element in maximizing scarce resources.

NGA's acquisition of functional management responsibility under the National Geospatial Program for a major Air Force operation at the National Air and Space Intelligence Center is an example of such collaboration. The Center is evolving as a federated partner with NGA to meet current requirements, especially those of our warfighters. The collaboration provides a model for the future expansion of GEOINT collaboration within the Intelligence Community.







Photo by NASIC Audiovisual Services

*NASIC has been involved in cutting edge scientific analysis, such as the missile telemetry analysis depicted here, since the 1950s.*

Air Force who work with imagery, overhead non-imaging infrared, synthetic aperture radar and thermal infrared. The NST is responsible for ensuring that NGP resources remain responsive to both sides of the equation (service requirements and NGA requirements) in support of both operational and national missions.

The Air and Space NST:

- » supports geospatial intelligence (GEOINT) requirements and initiatives of NASIC
- » collaborates on research-and-development efforts designed to improve GEOINT's contribution to combat intelligence and scientific and technical intelligence
- » fosters the integration of NASIC-based GEOINT into the broader NGP, and
- » ensures the provision of timely and actionable GEOINT from NASIC to shooters, acquirers, policymakers,

Commonwealth allies and civil customers outside the DoD.

The associated GIAT at Dayton continues to march toward an April 2007 standup with a focus primarily on AGI.

Of note, the NST is integrally involved in two additional activities at Wright-Patterson Air Force Base. The MASINT Development Consortium is a joint effort of NASIC and the Air Force Research Lab and Air Force Institute of Technology (AFIT) to explore possibilities for collaboration on AGI and MASINT-related activities and developments. Another partnership with AFIT, much of it at the master's and PhD level, seeks to push the envelope for GEOINT-based discovery and education.

### Goal Is to Create Better Products

AGI production travels a different course than that of traditional all-source data exploitation. Historically the







imagery, signals and MASINT data streams, as well as the exploitation of foreign material and open-source information, have been processed for use in house, resulting in large-volume scientific and technical intelligence products. For example, 98 percent of the imagery NASIC produces supports analysts within the Center. But when AGI processing is done, 70 percent leaves NASIC bound for external customers who frequently perform their own all-source integration.

Leaders on all sides have a goal to create one Dayton team jointly committed to improving all of NASIC's products and enabling a better defense of the nation. With this kind of integration, an observer will not be able to see a stark distinction between the missions of NGA and Air Force personnel but rather a persistent blur of activity leading to better and more fluid American battle-space dominance.

As Steve Bramow, Deputy Director of NGA's Office of Unified Operations says, "We are a single integrated GEOINT community, working as one to provide warfighters and policymakers with the products they need to make decisions and frame issues."

Based upon the comments of Air Force Col. Karen Cleary, NASIC Commander, that vision is being realized now. When asked her opinion regarding the effectiveness of the new order, the colonel responded, "When I tour the NASIC facility, I can't tell the difference between NASIC and NGA employees. That's integration at its best."

While the NST doesn't make the products, it does make them more responsive. The team helps ensure that NASIC analysts and leaders respond effectively to their wide-ranging internal and external tasking by serving as an aggressive advocate for NGP resources and by helping to develop leading-edge AGI exploitation, production and dissemination tools.

"Knowledge and communication are the lights that break through the fog of war and help bring order to chaos," someone once said. Similarly, the NST in Dayton is helping to bring light to the chaos of today's multipolar threat environment. P

**WILLIAM J. FOSTER (Left) AND MARIANNE KRAMER (Right)**

A retired Air Force lieutenant colonel, William J. Foster works for Riverside Research Institute supporting advanced geospatial intelligence customer outreach, requirements, and programming activities of the National Air and Space Intelligence Center (NASIC) NGA Support Team. His past military assignments include Chief of NASIC's Production Operations Division and Chief of the Air Intelligence Agency's Programs Division.



Marianne Kramer is a Senior Staff Officer in the Directorate of InnoVision's Information Integration Division. She is deployed to Wright-Patterson Air Force Base, Ohio, where she serves as the senior representative of the InnoVision Directorate to the NGA Support Team at the National Air and Space Intelligence Center (NASIC).

*The GOSC's mission is to support field commanders with the short-fused, multi-sourced GEOINT they require to execute their real-time day-to-day missions.*

Photo by NASIC Audiovisual Services



# Creation of GEOINT Fits Overall Intelligence Strategy

BY AMANDA CASHWELL AND PAMELA DUKE

In passing the Defense Authorization Act of 2004, Congress renamed the National Imagery and Mapping Agency as the National Geospatial-Intelligence Agency and established geospatial intelligence (GEOINT) as a new discipline. Congress wanted the workforce and its partners to no longer think solely in terms of images or maps but of combined, value-added GEOINT products. Today it seems obvious that what happened then involved more than semantics.

The year 2004 also saw the creation of two new authorities within the Intelligence Community (IC): the Under Secretary of Defense for Intelligence and the Director of National Intelligence (DNI).

The confluence of these three events is not coincidental. Just as GEOINT emerged as a formal discipline comprised of multiple inputs and players traversing traditional organizational constraints, the IC began structuring itself in terms of intelligence disciplines rather than along organizational boundaries.

We see this restructuring in the Directives of the DNI, which speak in terms of disciplines and tear down organizational barriers to promote efficiency, improve collaboration and avoid redundancy. At the same time, the Under Secretary of Defense for Intelligence has taken a functional approach in managing Department of Defense intelligence assets and coordinating the combat support agencies.

Two years after the official emergence of GEOINT, NGA is engaged in the new policy changes from our oversight authorities. We are developing policies that bring to bear the combination of components that make up this unique discipline to enable greater collaboration and the broadest use of GEOINT.

## GEOINT Policy Is Crucial

Adopting new software or acquiring different systems can be difficult, but changes in policy can be even more difficult because they are fundamental to an organization's culture and behavior. For NGA, effective policy, produced at multiple levels, supports the larger efforts of the IC to move forward and meet today's intelligence requirements. For example:

At the DNI level, communication among intelligence disciplines was facilitated when the DNI transferred authority for the disclosure and

release of national satellite imagery to the Director of NGA. This policy change also provided more uniform dissemination of information across the National System for Geospatial Intelligence (NSG).

In another policy change, the Director of NGA became the Functional Manager for the NSG, a role facilitated by the Office of Geospatial-Intelligence Management. This change enabled GEOINT to become more than an intelligence discipline. It became a community of people and skills, products and services.

Policy changes like these reflect a maturity in NGA's understanding of how the IC should operate as well as changes in the law that are aimed at greater and more efficient knowledge sharing. But maturity in our understanding is good only as far as our understanding is applied operationally.

## Unified GEOINT Operations

One way policy change is being applied is through Unified GEOINT Operations (UGO). This concept demonstrates NGA's implementation of its functional management responsibilities in the areas of source collection, analysis and production. It also demonstrates the maturation of NGA's collaborative initiatives, expanding NGA's integrated operations into a community-wide model. Part of the change in culture that has occurred since Congress renamed NGA, UGO is a collaborative and coordinated effort to assess, align and execute GEOINT analysis and production across the NSG and its partner organizations.

The development of effective GEOINT policy results in substantive benefits to the NSG, providing roles, responsibilities and guidelines for all aspects of GEOINT and defining its place in the IC. Ultimately the IC benefits through the support it receives toward the goal of defeating terrorism. P

AMANDA CASHWELL (Left) AND PAMELA DUKE (Right)

Amanda Cashwell is a Branch Chief in the Doctrine Directives and Policy Division of the Office of Geospatial-Intelligence Management.

Pamela Duke is a Booz Allen Hamilton contractor supporting the Doctrine Directives and Policy Division.



# Unified GEOINT Operations: A Significant Cultural Change

BY NAVY LT. JEAN DIETZ

**Unity of effort became a predominant theme within** the Intelligence Community (IC) following the attacks and aftermath of Sept. 11, 2001. That day clearly reminds those of us in the IC of our common purpose and the need to combine our resources, processes, capabilities and intellect to better understand and assess the motives and capabilities of our adversaries. As the Community evolves towards the “need to share,” the collaboration, coordination and sharing of information across the National System for Geospatial Intelligence (NSG) is part of this significant cultural change.

The steward of Unified Geospatial Intelligence Operations (UGO) is NGA's Office of Unified Operations (PO). UGO is defined as the collaborative and coordinated effort to assess, align and execute geospatial intelligence (GEOINT) analysis and production across the NSG. Through a combined emphasis on understanding national and global intelligence issues and an in-depth knowledge of GEOINT capabilities, UGO will align GEOINT analysis and production priorities and related sources across the NSG to improve the quality, timeliness and value of GEOINT.

The goal of UGO is to enhance overall GEOINT situational awareness and collaboration among NSG members and partners to achieve greater efficiencies in GEOINT analysis and production.

In order to accomplish specific goals, PO is designing and populating a UGO GEOINT Directory. One of the seven pillars of the UGO strategic implementation plan, the directory identifies the GEOINT capabilities and core competencies of NSG members. Currently there are multiple sources to go to for information; however, the goal of the directory is to provide “one-stop shopping,” a single source of all available GEOINT information including organizations, intelligence issues and capabilities. The directory will also assist in enhancing community awareness and networking.

The UGO seeks to improve collaboration efforts in the IC by bringing together Communities of Practice and

Communities of Interest to manage and resolve common GEOINT issues. Communities of Practice are teams that share knowledge and tradecraft to strengthen expertise and build collaboration across organizational boundaries. They also prepare new analysts and strengthen analysts to make significant contributions to multidisciplinary teams, such as Communities of Interest, which focus on specific issues.

Another pillar of UGO is performing issue- and capability-based GEOINT assessments of NSG members and partners. By visiting the NSG members and partners, including the other agencies and service intelligence commands, UGO seeks to voice the importance of coordination and collaboration efforts, as well as the need for culture change. Team members recently visited the Defense Intelligence Agency, Army Joint Staff, Missile and Space Intelligence Center, National Air and Space Intelligence Center and U.S. Central, Southern and Northern Commands.

By focusing on collaboration between NSG members and partners and across the IC, UGO will lead GEOINT operations into the future.

NSG members and partners include the IC, Chairman of the Joint Chiefs of Staff, military departments (including services), combatant commands, elements of the federal community (including the Department of Homeland Security and U.S. Geological Survey), the Civil Applications Committee, international partners, industry, academia, Defense service providers and civil community service providers. P

**NAVY LT. JEAN DIETZ**  
is an NGA Staff Officer  
in the Office of Unified  
Operations.







## Seven Pillars of UGO

The seven pillars of Unified GEOINT Operations are specific deliverables that define the effort and carry out its mission:

1. “UGO Doctrine, Concept of Operations and Guidance” institutionalizes UGO into the governance and operations of the National System for Geospatial Intelligence (NSG), enabling culture change.
2. “UGO Process and Business Model” defines the overarching GEOINT operational process under the umbrella of UGO.
3. “NSG Analysis and Production Plan” provides Web access to the NSG.
4. “Facilitating GEOINT Collaboration” involves implementing and exercising the UGO process through a collaborative issue- and capability-based management approach and through Communities of Interest and Communities of Practice that address the technology, systems, tools, and associated training need for true collaboration.
5. “NSG Analysis and Production Forum” is a formal conference for the NSG community to discuss GEOINT analysis and production and all issues related to UGO.
6. “NSG GEOINT Directory” is a descriptive Web-based database that supports the UGO process to identify who’s doing what GEOINT where and identifying capabilities.
7. “Cross-Functional Coordination” is an effort to ensure that the NSG GEOINT strategy, strategic implementation plans and functional management are coordinated.





## NGA CIO Takes Initiative on Collaboration

BY THOMAS M. CLARK

By the time NGA's Director, Vice Adm. Robert B. Murrett, released NGA's Focus Areas last October, the Office of the Chief Information Officer (OCIO) had already made significant progress toward the first item on his list. Focus Area 1 calls for NGA to "look outward and be the most collaborative partner with the Intelligence Community (IC) and warfighter." Six months before the Director announced his Focus Areas, OCIO had chosen collaboration with IC CIOs as a top priority.

OCIO has frequently taken the lead in information technology (IT) collaboration within the IC. OCIO participates in forums and working groups of the Office of the Director of National Intelligence (ODNI) and Department of Defense (DoD) and initiates quarterly one-on-one meetings and activities with its counterparts across the IC. In 2006 the office established partnerships with the CIA, DoD, Defense Information Systems Agency, National Reconnaissance Office and National Security Agency, and it is driving for more.

CIOs in the IC face similar challenges based on providing ever-improving IT services with ever-shrinking IT budgets. They have a common interest in collaborating on Community solutions instead of resorting to unique stopgaps. Collaboration also facilitates the adoption of Community-wide standards, which are necessary for realization of the ODNI's goals for information sharing.

One of the largest IT challenges facing the IC is the management and storage of data. OCIO is working with its other IC CIO partners to develop a shared data-center strategy that will provide an effective and secure solution to this challenge. OCIO is also working to devise more efficient means of transmitting data across the IC and to our mission partners in government and on the battlefield. For example, OCIO is working with DIA in its efforts to consolidate the assets of the DoD Intelligence Information

System; this will reduce costs, increase efficiencies and improve mission-effectiveness.

In the area of sharing information, one of the greatest challenges is ensuring that analysts and partners have access to all the information they need on one workstation. The work to be done to bring the various classified networks together on one workstation, while maintaining the multi-level security requirements of these networks, is daunting. NGA's OCIO is working with its CIO partners to explore the feasibility of a single network or dual-network, multi-level security strategy. The end result of this analysis will determine the next generation of NGA computers and the networks at NGA's New Campus East.

While much has been learned and accomplished with the existing IC CIO quarterly meetings, OCIO plans to continue to establish similar meetings with new IC partners in 2007. OCIO will use these new relationships to explore new opportunities for collaboration and cooperation across the IC. OCIO plans to use these one-on-one meetings as a starting point for facilitating IC-wide and multi-agency forums to tackle challenges or leverage opportunities as a community. Through these collaborative efforts, OCIO is improving the collective effectiveness and information sharing of the IC to meet the challenges of national security in the 21st century. P

**THOMAS M. CLARK**

is a Booz Allen Hamilton contractor who leads contractor support for OCIO outreach efforts.



## PARTNERSHIPS

# NGA and Department of Energy Collaborate on Softcopy Initiative

BY SHANNAN SIMMS AND KEVIN COLE

Increasing the ease with which NGA's partners can access needed intelligence is critical to our nation's security. Last December the Department of Energy (DOE) began operations with NGA's Imagery Exploitation Capability (IEC), the backbone of the National System for Geospatial Intelligence (NSG). Recently, the IEC Program was honored as one of the top five programs in the Department of Defense.

The joint NGA/DOE Softcopy Initiative is designed to increase the ability of DOE intelligence analysts to access NGA data in a timely manner. It will facilitate close coordination and data sharing with the Intelligence Community, Department of Homeland Security and law-enforcement organizations. Lawrence Livermore National Lab in Livermore, Calif., was the first DOE site to receive the imagery-exploitation architecture. Plans call for five more DOE laboratories and DOE headquarters to receive the softcopy architecture in 2007.

Historically DOE's six labs that regularly receive and use imagery had to wait for hardcopy or tape shipments. In a few instances a lab connected to the Joint Worldwide

Intelligence Communication System was able to download a limited amount of softcopy imagery through the Web-based Access and Retrieval Portal. This time-consuming process could take from days to weeks to address imagery source requests. In addition, most of the labs only had a few locally built softcopy workstations. They used

light tables for exploiting hardcopy imagery and employed scanners to digitize hardcopy imagery for inclusion in reports and products. This outdated methodology caused significant inefficiencies in the production of imagery intelligence.

It was evident that softcopy architecture was required to reduce the time DOE intelligence analysts took to respond to imagery requests, improve data storage efficiency and imagery re-purposing, and increase the ease of sharing data with other Intelligence Community entities. With the new NGA architecture, imagery source



Department of Energy photo

*The National Atmospheric Release Advisory Center at the Department of Energy's Lawrence Livermore Laboratory projects the spread of pollutants for managers responding to an emergency. The laboratory recently began operations with NGA's Integrated Exploitation Capability.*

requests that formerly took days to weeks to fulfill are now accomplished in minutes on IEC workstations.

The IEC provides access to both NGA and commercial imagery repositories, all-source intelligence and tools for multi-intelligence data fusion. Based on commercial off-the-shelf products, it requires minimal custom software. The software can be used on industry-standard desktop computers or as a platform-independent software-only product.

While innovations like the Softcopy Initiative help NGA's partners achieve their goals, they also ensure that NGA achieves its goal as the premier provider of GEOINT. **P**

### SHANNAN SIMMS (Left) AND KEVIN COLE (Right)

Shannan Simms is a Booz Allen Hamilton contractor supporting NGA's Office of Corporate Relations. She came to NGA from a similar position with the National Reconnaissance Office.

Kevin Cole works in the Office of Geospatial-Intelligence Management as NGA's Liaison to the Department of Energy.





## PARTNERSHIPS

# NGA, University of Missouri Sign Agreement

BY DEL KOSTKA

Imagine a network of micro-sized aerial drones, each providing unique video feeds and targeting information to a master unmanned aerial vehicle (UAV). The UAV processes these inputs and transmits a composite, geo-rectified video stream to remote ground-control units. In addition to the composite, large-area video stream, the master UAV provides target control points, metadata and automated scene descriptions for instant analysis and decision-making. Dynamic statistical models and spatio-temporal algorithms alert analysts on the ground to abnormal events and activities, supplementing their manual flight control and visual monitoring.

One might expect this high-tech drama to be played out in the U.S. Central Command's theater of operations, but hardly in a Midwestern university laboratory. Yet this is precisely the type of cutting-edge scenario being developed at the University of Missouri at Columbia's (UMC) Center for Geospatial Intelligence.

### Alliance with NGA

Last year the center signed an agreement with the NGA Office of the Technical Executive (TX) that addresses both research and education. The proximity of the campus in Columbia, Mo., to NGA St. Louis, the strength of existing UMC research and development programs and NGA's dedication to advanced education and the geospatial intelligence (GEOINT) tradecraft were factors that made a partnership mutually beneficial. With feedback and support from NGA, the university has developed a comprehensive GEOINT-focused curriculum.

### Multidisciplinary Program

Dr. Curt Davis, Croft Distinguished Professor of Electrical and Computer Engineering, founded the Center for Geospatial Intelligence after recognizing the university's potential to support the research and development of GEOINT applications. Academic programs at UMC that can be integrated to support GEOINT research and development include electrical engineering, computer engineering, computer science, geography, civil engineering and geospatial sciences.

These academic programs allow the Center to draw upon faculty and technical staff capable of conducting research in satellite and airborne remote sensing, advanced geospatial data processing, automated feature

extraction, target recognition, large dataset visualization and data mining. The center also has access to faculty from the geologic and mining engineering programs at the University of Missouri at Rolla with expertise in the detection and characterization of underground structures. By leveraging these multidisciplinary skills, the center is able to conduct advanced research on the GEOINT needs deemed critical to national security, homeland defense and combat support.

### Facility under Construction

While the research capabilities of the university's academic programs were a given, the facilities and infrastructure to implement the vision for the Center for Geospatial Intelligence required funding and resources. In addition to funding Congress provided in fiscal 2006, the University of Missouri allocated \$2 million in privately donated funds for the construction of a dedicated facility. Completed in January 2007, the 7,000-square-foot facility contains a number of specialized laboratories for the processing and exploitation of geospatial data and information for a wide variety of intelligence and military applications.

NGA's Educational Partnership Agreement, signed last year, encompasses a variety of research, education and training activities. A subsequent statement of work, facilitated by NGA's InnoVision Directorate, provides strategic direction for the center's research and development projects.

Davis and representatives from the National Geospatial Intelligence College are exploring ways by which NGA employees can benefit from the wide variety of in-resident and distance-learning programs offered by the university, as well as opportunities to connect university students with NGA.

Information concerning the University of Missouri-Columbia's Center for Geospatial Intelligence can be found at [geoint.missouri.edu](http://geoint.missouri.edu). P

#### DEL KOSTKA

is an NGA Staff Officer  
in the Office of the  
Technical Executive.



WORKING FOR NGA

## A Day in the Life of CENTCOM NST Staff

By JESSICA RASCO

**Beep! Beep! Beep!** It's 0500 and the alarm clock rustles Army Col. Bill Harmon from a sound sleep. Minutes later he is heading for the office in Tampa, Fla., where he leads the U.S. Central Command (CENTCOM) NGA Support Team (NST). From its headquarters at MacDill Air Force Base in Tampa, CENTCOM plans and conducts U.S. military activity in a vast region of 27 countries primarily in North-east Africa, Southwest and Central Asia. The NST provides geospatial intelligence (GEOINT) support to CENTCOM while reaching back to NGA, when access to Agency's the full resources is needed.

Colonel Harmon finds the office is in a flurry of activity. Two NST members are preparing for the 0730 "mobile eye" with NGA's Office of Global Support, a meeting that brings together NGA staff and analysts from around the world—Afghanistan, Bahrain, Iraq, Qatar, Bethesda, Reston, Va., St. Louis and Tampa. Simultaneously, the NGA Director's daily video teleconference (VTC) is coming on-line. The phone is also ringing. A team member announces the arrival of two visitors who want discuss their duties as future deployed site leads. They will spend the next two days shadowing operations at the NST and meeting CENTCOM counterparts.

A senior imagery officer arrives to attend the Director's VTC, and Colonel Harmon steps out to attend a briefing by the CENTCOM Commander.

Each morning the NST office deals with a flurry of meetings and checklists to ensure NGA has representation in all the right forums. One of the NST members is preparing for an ad hoc collection meeting. An American aircraft has crashed in Iraq, and NGA analysts are spinning to provide timely GEOINT of the crash site to the recovery team. Ad hoc requirements like this occur constantly.

Meanwhile, a staff member quietly reviews submissions to an awards program she has created, as she sets standards for the awards panels to come. Just getting

uninterrupted time to dedicate to details like this is a challenge.

I am searching a laundry list of CENTCOM requirements for needs specific to Iraq. There is potentially more supplemental funding, so justifications need to be strong, concise and relevant. The senior expert in advanced GEOINT (AGI) is spending most of the day planning for an upcoming conference.

As the day progresses, the NST Technical Executive gets caught up in a discussion of system architecture for the CENTCOM AOR (Area of Responsibility). The Deputy NST Chief touches base with staff officers as he prepares a report of NGA highlights for CENTCOM J2 (joint staff, intelligence) meeting. He pauses to change the oil in the shredder; then leaves for his meeting.

Throughout the day, calls and e-mails come in from all over the NGA footprint. Team members flip through four e-mail systems to answer questions and requirements from NGA and CENTCOM personnel. Although the operations tempo is consistent day to day, there is always a new challenge to tackle.

Colonel Harmon has been working through high-priority disclosure issues. Sharing information with mission partners is crucial to command operations. If NGA can't get GEOINT to the last tactical mile, it may lose its impact on mission success.

By 1600, most of the overseas personnel have called it a day. It gets quieter in the office and the staff catches up on the burning issues. Looking ahead, our administrative assistant posts the schedule for the following day.

After finishing e-mails and addressing actions from "CONUS NGA," Colonel Harmon comes to a good stopping point. Meticulous about organizing requirements and ensuring that customers have the best GEOINT, he turns out the light and closes the door, his desk and conscience clear. ■

### JESSICA RASCO

is the Business Executive of the U.S. Central Command NGA Support Team.





## OUR HERITAGE

# Could the British Have Won at Yorktown—with GEOINT?

BY BRUCE HEINLEIN

The victory of the Americans and French at Yorktown, Va., Oct. 19, 1781, which secured the independence of the United States, was a tribute to their ingenuity and perseverance. It was also an admonition about going into battle without adequate knowledge of the area and enemy troop movements—what we call geospatial intelligence (GEOINT)—as the British did.

How did the British under Gen. Charles Cornwallis become trapped in this small port at a bend in the York River? Military leaders have always sought information about the location of their enemies and their ability to maneuver. Commanders have always needed geospatial information, such as the type of terrain, obstacles to movement and what to expect for weather.

As Lord Cornwallis advanced from the south into Virginia that summer, American forces under French Gen.

Marquis de Lafayette withdrew. But instead of chasing them, Cornwallis chose to rest at Yorktown and wait for naval supplies. In doing so, he misunderstood the town's suitability for defense.

While Yorktown had 300 homes and some docks, the cliff the town stood upon prevented a naval defense. There was room for ships to anchor in the

river below, but the river was so wide and the currents so strong that an attempt to escape to the other side would face significant challenges. And, finally, while the town offered a small frontage for defense, the few ravines that led away from town further limited the potential for escape.



Used with Permission, National Park Service, Colonial National Historic Park, Yorktown Collection.

General Lord Cornwallis



Used with Permission, National Park Service, Colonial National Historic Park, Yorktown Collection.

Yorktown prior to the Battle of Yorktown.

The British fleet had expected to control Chesapeake Bay and thereby Yorktown through sheer force. But the French fleet arrived first and blocked their access. The two fleets fought an inconclusive battle that yielded strategic results: the British fleet withdrew to New York, and the French fleet resumed their blockade. Worse, the British had no idea that the bulk of the Continental Army, led by Gen. George Washington himself, was moving to Yorktown.

The move south into Virginia was the best deception and greatest strategic-mobility effort by the Americans during the war. The bulk of the American army arrived before Cornwallis was aware that the Americans were moving. His intelligence failed him, and he was now facing the majority of the American army, which a French army soon joined. As the combined forces besieged Yorktown, the British found themselves trapped. Their only hope was that promised reinforcements would arrive from British-occupied New York City, but the reinforcements did not arrive.

The confines of the hamlet offered little shelter from the cannon fire except for a small beach below the cliff. The British tried to escape across the river but currents and a





Photo courtesy of Architect of the Capitol

*The surrender at Yorktown. Lord Cornwallis' deputy surrenders to General Washington.*

storm prevented the escape. As Washington tightened the siege lines, the British became more cramped. About two weeks after the siege began, they surrendered.

As a defensible site Yorktown paled in comparison to others locally available. Also, Cornwallis received intelligence too late on the movement of the large Continental Army. With better information, he might have escaped defeat. A third of the British Army in North America surrendered at Yorktown. The largest and most professional army in the world, with a long string of military victories in the American Revolution, was suddenly defeated and the war lost, in part because of poor geospatial information and intelligence.

History is filled with examples of military commanders failing to take advantage of GEOINT. It reminds us that our tradecraft is important, even when it may appear not to be. P

#### BRUCE HEINLEIN

is a retired Air Force colonel and Chief of the Technologies Branch in the Joint Operations Integration Office. He has published research on the Battle of Yorktown and worked for the National Park Service at the Yorktown National Battlefield.



## NEW CAMPUS EAST

# Workforce Inspires Designs

BY GAIL CHEROCHAK

**With the first busy year complete since the 2005** Base Realignment and Closure (BRAC) announcement, the design process for NGA's new campus at the Engineer Proving Ground (EPG) in Springfield, Va., is proceeding on schedule.

When the Army designated the EPG as the "preferred site" for NGA at Fort Belvoir in July 2006, NGA's joint-venture architect/engineer firms began to design NGA's campus. During their deliberate, multi-step design process, they have conducted field investigations of EPG, visited NGA's workspaces and developed design criteria. The joint venture firms also interviewed NGA's leaders to understand requirements for space, technology and collocation with other offices. NGA leaders toured other federal and private sector facilities to see a range of modern workplace concepts, and employees completed a questionnaire about their work activities and space usage.

As another step of the design process, planners have reviewed suggestions submitted by NGA's workforce. Given that NGA installations cover a variety of aging and modern work environments, the workforce has supplied plenty of examples of best practices for mission support, building design and quality of life.

Mission-related suggestions for the campus focus on communications connectivity with Department of Defense and Intelligence Community partners, flexible workstations and collaborative work areas. For collaboration with mission partners, employees request expanded conference facilities for hosting events and training facilities for the National Geospatial Intelligence College. Desired building and campus design elements include windows and skylights, sheltered outdoor walkways and convenient access to parking. Employees also want to occupy an energy-efficient facility to limit the campus's

environmental impact, and they are concerned about the effect of the NGA site on regional transportation networks. Beyond the mission, employees request quality of life items such as a variety of food services, a fitness center, jogging trails, child care and shopping services. The extent of these features will depend on funding, policies and the many approvals needed for the campus.

From the collective input, the joint venture has developed numerous design concepts that have been evaluated at architectural design sessions, moving toward a master plan that encompasses all of NGA's needs. During 2007 the new campus design will evolve as NGA waits for the Army's approval to proceed with construction. The EPG is being used as the preferred planning location while the environmental impact statement (EIS) for Fort Belvoir's BRAC actions is being prepared as the next phase of the National Environmental Policy Act process. The draft EIS is expected to be available for public review during the early spring of 2007. NGA anticipates that the EIS process will conclude on schedule, enabling the Army to issue its Record of Decision and update its Real Property Master Plan. This will allow construction of the campus to begin in the autumn of 2007.

The first year of planning has passed quickly. Although five years may seem like a long period before the BRAC deadline of Sept. 15, 2011, at this rate NGA will be moving in no time at all. P

### GAIL CHEROCHAK

was a communications specialist contractor in NGA's New Campus East Program Management Office.







# SAVE THE DATE

## 3rd Annual GEOINT TECH DAYS

### **FORWARD FOCUSED:** Technologies for Global GEOINT

The National Geospatial-Intelligence Agency (NGA) and the United States Geospatial Intelligence Foundation (USGIF) invite you to attend the 3rd annual TECH DAYS, an event specifically designed to highlight the next generation of essential geospatial technologies uniting the intelligence, defense, and homeland security communities to further enhance our national and global security.

#### **NGA Technology Day** (NGA personnel only)

NGA offices share tradecraft and GEOINT advancements (Classified: SI/TK)

Tuesday, May 15  
NGA Headquarters, Bethesda, Md.

#### **NGA Technology Day**

Mission partners are welcome to tour NGA office demonstrations and discuss collaborative efforts (Classified: SI/TK)

Wednesday, May 16  
NGA Headquarters, Bethesda, Md.

#### **Industry Technology Day & Interop Demo**

Examine USGIF Members' cutting-edge geospatial intelligence technologies (Unclassified)

Thursday, May 17  
Sheraton Premiere at Tysons Corner, Vienna, Va.



Co-sponsored by the United States Geospatial Intelligence Foundation (USGIF) and the National Geospatial-Intelligence Agency (NGA)

For more information please visit the TECH DAYS website  
[www.usgif.org/Events\\_TechDays.aspx](http://www.usgif.org/Events_TechDays.aspx)



[www.nga.mil](http://www.nga.mil)